

Forest plantations in tropical countries:

**A powerful tool for forest management, conservation and
restoration in a climate change perspective**

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organization

French public agency
agronomy research and development for tropical countries
3 departments
45 research units
1600 staff in 40 countries



priorities

6 strategic research priorities

- Ecological intensification
- Biomass - energy
- Food and nutrition
- Animal health, emerging diseases
- Public policies
- Rural and forest territories



mission

Finalized research
Based on MDG
Knowledge based on partnership with national bodies



specificities

Long and rich history
Long partnership with countries and institutions
Long term field research
Good knowledge of territories, actors and products flows

SES :is this concept appropriate ?

Users

Global changes
(ex : climate)

Public
policies

Forests socioecosystems
SES

BES < > PSE ?

Relations
between
resilience of
forest SES
and societies
vulnerability

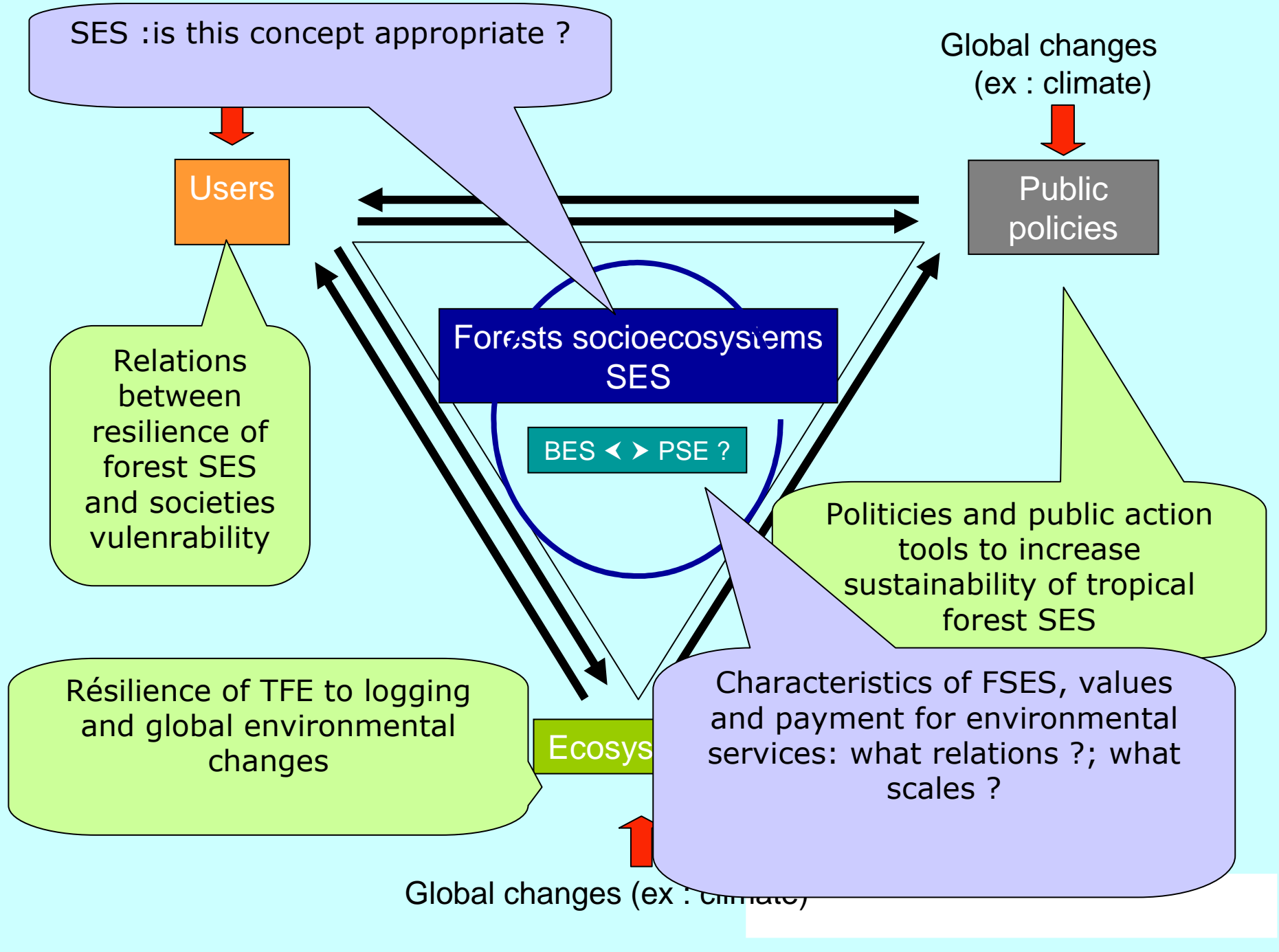
Policies and public action
tools to increase
sustainability of tropical
forest SES

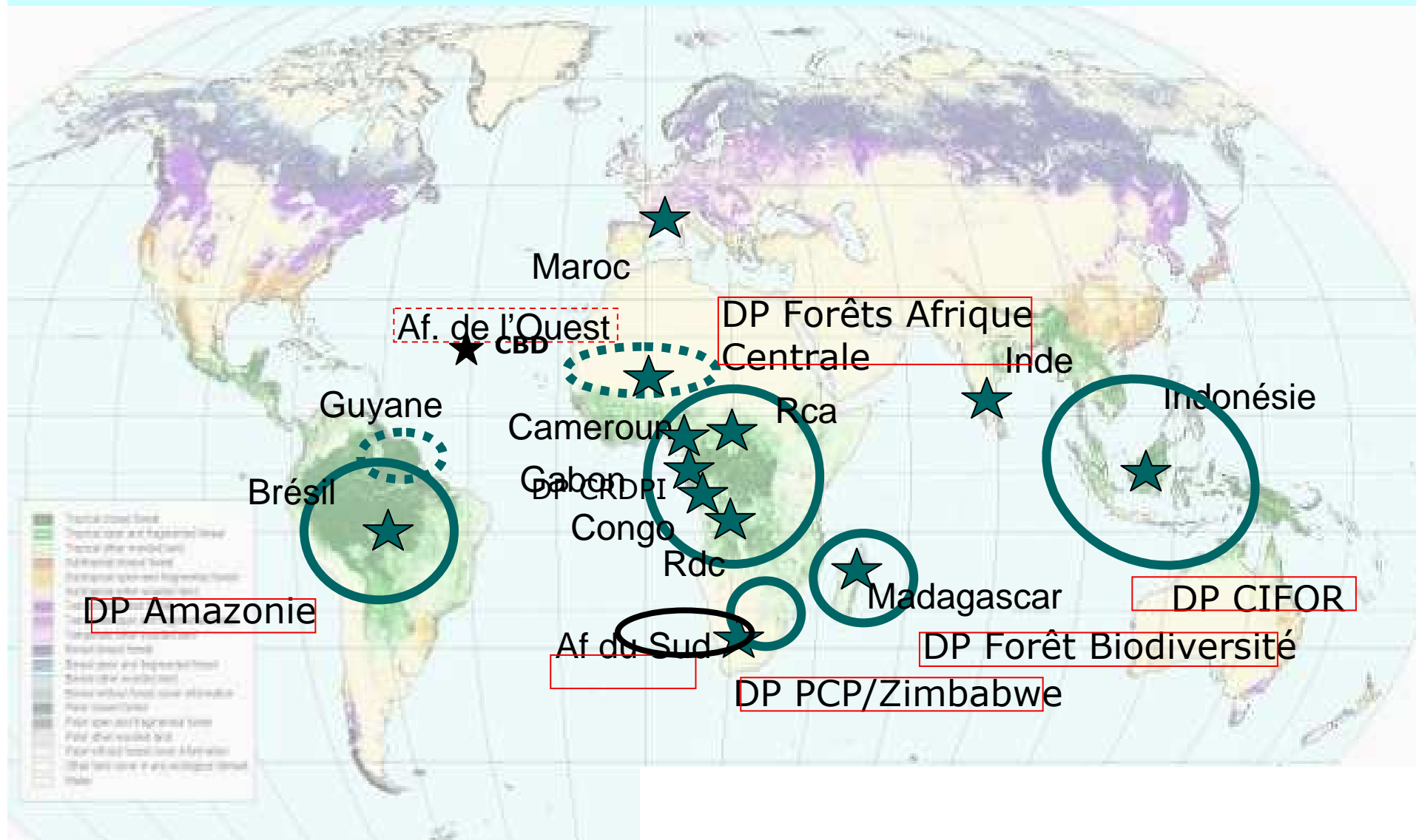
Résilience of TFE to logging
and global environmental
changes

Characteristics of FSES, values
and payment for environmental
services: what relations ?; what
scales ?

Ecosys

Global changes (ex : climate)





- **A long experience in tropical plantations**
- **New demands for plantation forestry**
- **Endless evolution for forests**
- **New values for planted forests**
- **Climate change, plantation forestry and carbon opportunities**
- **Some specific issues related to forest plantations**

A long experience in tropical plantations

- **Fast growing exotic species** for industrial wood or energy wood on savannas
- **Monospecific plantations** with local species after removing natural forests
- **Restoration of degraded forests** with natural or exotic species for high quality timber
- **Enrichment of forests** after logging



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- **Agroforestry in a broad sense**



New demands for plantation forestry in a climate change environment

- **International financing strategies and policies**
- **Privatization of the forest based sector**
- **Strong environmental pressure**
- **Certification: better sustainable management or just market tool ?**
- **management plans for all forest concessions**
- **Strong demand for social benefits (employment, welfare...)**
- **Evolution in markets and tools (smaller wood)**
- **Energy demand increases (urban and periurban)**
- **Food and NWFP demands give new opportunities for agroforestry**
- **Carbon market opportunities (CDM / REDD)**



A endless evolution for forests all around the world

- **In temperate countries, centuries of decline (agriculture, industry)**
- **And now rapid increase in area and volume since century 20**
- **Sustainability does not mean all uses at the same level of management**
- **Increase in costs may induce spatialization of forest priority uses (« wood factories »,...)**
- **Induced effects of climate change (positive and negative)**

new values for planted forests

- **Traditional values are production of wood, protection and greening.**

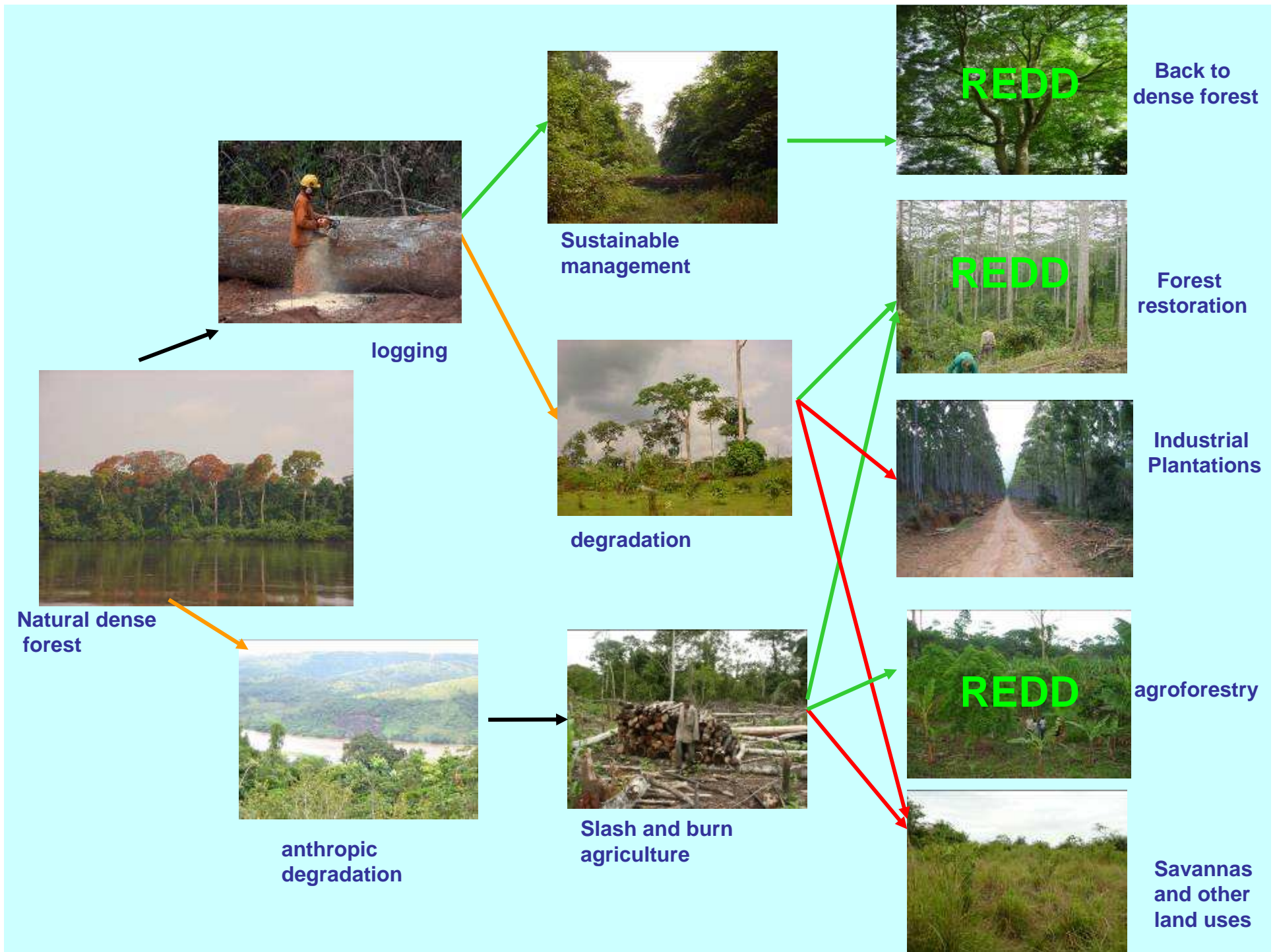
New values appear as (e.g.)

- **Added value to forest concession management plans**
- **Economic enhancement of forest value**
- **Better economic value means better social and ecologic values**
- **Political impact in term of territorial organization**
- **Urban and periurban needs**

- Logging more trees on smaller areas means lower costs
- Homogeneity in trees means standard products and better markets
- Creation of economic flows and infrastructures

- Rehabilitation of forest diversity with mixed plantations x natural forests
- Plantations are a land mark and the last protection before deforestation
- Plantation catalytic effect is real

Climate change, plantation forestry and carbon market opportunities





Savannas or non forested areas



Forest plantations



No management



Other land uses



Evolution towards natural forest



Agroforestry



intensive production



Natural progression of dense forests



degradation or other land uses

transformation



transport



utilisation



Charcoal efficiency



fossil fuels



Burning efficiency

Important carbon prints at each stage of the cycle, which could be valorized by C markets

Activity

***impact on
carbon stocks***

carbon markets ?

**Degraded
forests
management**

stabilization

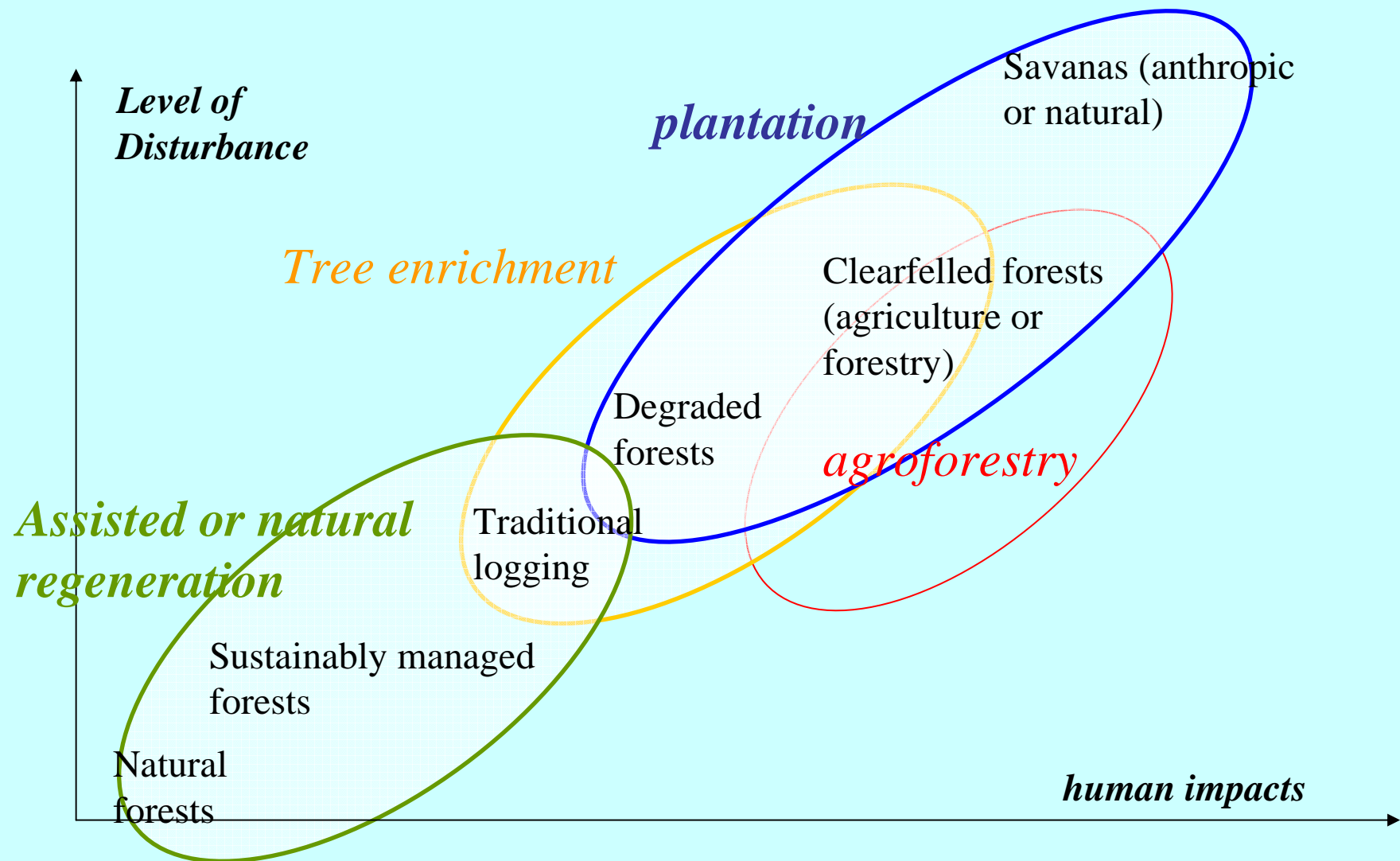
REDD, REDD+

**Plantations
on non
forested
areas**

**Increase stocks
(carbon sinks)**

CDM

Plantation is one tool amongst others available for tropical forestry



Some specific points related to forest plantations sustainability

- Forest plantations are not natural forests
- Plantation is a complex proces, often underestimated
- Always a human decision before implementing on the field
- Plantations cost money (including certification) and we expect benefits (monetary or not)
- Some generic principles and many specific and precise techniques
- Most of the failures and unwanted side effects around the world have human origins (institutional, economic, ecologic, social,..)
- Certification and/or sustainability ?
- Short term plantations must allow reversibility for other land use after final logging.

Thank you for your attention